

ABSTRACT

The present invention addresses the processing of waste and low-value products to produce useful materials in reliable purities and compositions, at acceptable cost, without producing malodorous emissions, and with high energy efficiency. In particular, the invention comprises a multi-stage process that converts various feedstocks such as offal, animal manures, municipal sewage sludge, tires, and plastics, that otherwise have little commercial value, to useful materials including gas, oil, specialty chemicals, and carbon solids. The process subjects the feedstock to heat and pressure, separates out various components, then further applies heat and pressure to one or more of those components. Various materials produced at different points in the process may be recycled and used to play other roles within the process. The invention further comprises an apparatus for performing a multi-stage process of converting waste products into useful materials, and at least one oil product that arises from the process.